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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/973,287	10/05/2001	Iraj Parchamazad	F99182	6007

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EXAMINER

RIDLEY, BASIA ANNA

ART UNIT	PAPER NUMBER
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1764

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 09/973,287	Applicant(s) PARCHAMAZAD, IRAJ	
	Examiner Basia Ridley <i>BR</i>	Art Unit 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Newly submitted claim 5 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

- I. Claims 1-4 are drawn to a reformer, classified in class 48, subclass 127.9.
- II. Claim 5 is drawn to method for mixing, classified in class 137, subclass 3.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination I has separate utility such as production of synthesis gas to use in a Fischer-Tropsch Processes. See MPEP § 806.05(d).

The examiner has required restriction between subcombinations usable together. Where applicant elects a subcombination and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 5 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Drawings

2. The replacement Drawing Sheet 2 of 2 was received on 27 April 2006. These drawings are acceptable.

Claim Objections

3. Claims 1-4 are objected to because of the following informalities: in claim 1 recitation "said steam tube being formed and to draw said hydrocarbon gas into mixture with said steam, and to direct said steam in a path that is at an acute angle with the path of said fuel outflow, said fuel flow path lying substantially along the axis of said coaxial fuel and steam tubes, and that crosses said fuel path at an acute angel from all radial directions" (see paragraph bridging pages 2 and 3 of amendment filed on 23 October 2006) should be amended.

Claim Rejections - 35 USC § 102 or 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1-4 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Fischer et al. (USP 3,718,506).

Regarding claims 1, Fischer et al., in Fig. 2, discloses a reformer comprising:

- a cylinder (13) comprising catalyst with a cap at each end (Fig. 2);
- a fuel tube (3') having an outflow end coupled to said cylinder for introducing a hydrocarbon gas into one end of said cylinder (13);
- a steam tube (3a') coaxial with and surrounding said fuel tube (3') for concurrently introducing said hydrocarbon gas and steam at said one end of said cylinder (13), said steam tube (3a') having a tip at its outflow end that is gradually reduced in diameter over its length to form a truncated conical tip, said fuel tube (3') having a substantially open end coincident with and smaller diameter than said steam tube diameter (Fig. 2);
- an outflow tube protruding outwardly from said cylinder at an end of said cylinder opposite of said one end (Fig. 2);
- said steam tube being formed and to draw said hydrocarbon gas into mixture with said steam, and to direct said steam in a path that is at an acute angle with the path of said fuel outflow, said fuel flow path lying substantially along the axis of said coaxial fuel and steam tubes, and that crosses said fuel path at an acute angle from all radial directions (Fig. 2).

Fischer et al., (in Fig. 2 and C5/L20-23) teaches catalyst bed that appears to be the same as, or an obvious variant of the loosely packed palletized catalyst bed set forth in the instant claim.

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Regarding claims 2 and 4, Fischer et al., in Fig. 2, discloses all of the claim limitations as set forth above. Additionally the reference discloses the reformer wherein:

- said fuel tube (3') has a tip of given length at its outflow end that is reduced in diameter gradually along said given length (Fig. 2);
- said reformer comprising a heat source (10') around said cylinder (13) for heating said catalyst.

Regarding claim 3, Fischer et al., in Fig. 2, discloses all of the claim limitations as set forth above. Additionally, the reference discloses the reformer wherein said hydrocarbon gas is propane (C3/L52-53). While the reference does not explicitly disclose that said propane is stored as liquid in a container, since propane is customarily stored and transported in liquid form, a presence of said container for storing liquefied propane is inherent in the apparatus of Fischer et al.

Regarding limitations recited in claims 1-4 which are directed to a manner of operating disclosed reformer, the examiner notes that neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115.

Instant claims 1-4 structurally read on reformer of Fischer et al.

Response to Arguments

6. Applicant's arguments filed 22 September 2005 have been fully considered but they are not persuasive.

7. The applicant argues that Fischer et al. does not disclose concentric steam and fuel tubes, but rather tubes for mixing unreacted flammable gases with fuel gases. This is not found persuasive, because Fischer et al. discloses a fuel tube (3') having an outflow end coupled to said cylinder for introducing a hydrocarbon gas into one end of said cylinder (13) and a steam tube (3a') coaxial

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with and surrounding said fuel tube (3') for concurrently introducing said hydrocarbon gas and steam at said one end of said cylinder. See C5/L17-38 of Fischer et al. for disclosure of gases being respectively discharged through tubes 3' and 3a'.

8. The applicant argues that Fischer et al. does not disclose said tubes for mixing high pressure steam and low pressure hydrocarbon fuel such that steam crosses the fuel flow at an acute angle from all radial directions. Said argument is directed to a process but is not germane to the apparatus defined by rejected claims, as there is no meaningful distinction between the claimed structure and the apparatus of Fischer et al. It is well settled that the intended use of a claimed structure or apparatus does not serve to distinguish the claimed device over the prior art. *In re Yanush*, 477 F.2d 958, 989, 177 USPQ 705, 706 (CCPA 1973); and *In re Casey*, 370 F.2d 576, 580, 152 USPQ 235, 238 (CCPA 1967). Further, it has been held that neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115. Further, process limitations do not have patentable weight in an apparatus claim. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim.". Additionally, the examiner notes that Fischer et al. does, in fact disclose tubes for mixing steam and hydrocarbon fuel (see above), and it is clearly shown (by arrows in Fig. 2, depicting flow of gas (steam) in tube 3a') that said steam will, inherently, cross the fuel flow at an acute angle from all radial directions.

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Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

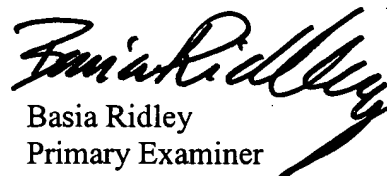
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Basia Ridley, whose telephone number is (571) 272-1453.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola, can be reached on (571) 272-1444.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Technical Center 1700 General Information Telephone No. is (571) 272-1700. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Questions on access to the Private PAIR system should be directed to the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).


Basia Ridley
Primary Examiner
Art Unit 1764

BR
January 6, 2007